

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:
 Daohong Zhou and Aimin Meng

Serial No.: 10/529,661

Filed: March 29, 2005

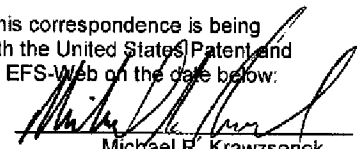
For: USE OF CASPASE INHIBITORS AS A
 THERAPEUTIC AGENT AGAINST
 RADIATION-INDUCED INJURY

Group Art Unit: 1654

Examiner: Unknown

Atty. Dkt. No.: MESC:008US

Confirmation No.: 8809

| CERTIFICATE OF ELECTRONIC TRANSMISSION | |
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| I hereby certify that this correspondence is being electronically filed with the United States Patent and Trademark Office via EFS-Web on the date below: | |
| March 26, 2007 |  |
| Date | Michael R. Krawczarek |

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

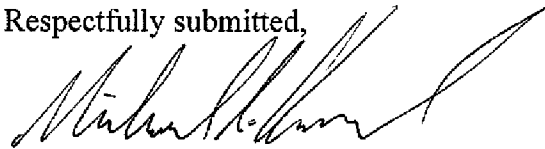
In accordance with 37 C.F.R. §§ 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to

be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. §§ 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/MESC:008US.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



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Attorney for Applicants

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Austin, Texas 78701
(512) 474-5201

Date: March 26, 2007

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| U.S. Patent Documents <i>See Page 1</i> | Foreign Patent Documents <i>See Page 1</i> | Other Art <i>See Page 1-5</i> |

U.S. Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Name | Class | Sub Class | Filing Date of App. |
|-------------|-----------|-----------------|----------|--------------------------|-------|-----------|---------------------|
| /MA/ | A1 | 2002/0090603 | 07/11/02 | Upton <i>et al.</i> | 435 | 4 | 06/05/01 |
| /MA/ | A2 | 5,552,400 | 09/03/96 | Dolle <i>et al.</i> | 514 | 221 | 06/08/94 |
| /MA/ | A3 | 6,200,969 | 03/13/01 | Fritz <i>et al.</i> | 514 | 212.05 | 09/12/97 |
| /MA/ | A4 | 6,426,413 | 07/30/02 | Wannamaker <i>et al.</i> | 540 | 524 | 09/05/00 |

Foreign Patent Documents

| Exam. Init. | Ref. Des. | Document Number | Date | Country | Language |
|-------------|-----------|-----------------|----------|---------|----------|
| /MA/ | B1 | EP 0547699 | 06/23/93 | Europe | English |
| /MA/ | B2 | WO 91/15577 | 10/17/91 | WIPO | English |
| /MA/ | B3 | WO 93/05071 | 03/18/93 | WIPO | English |
| /MA/ | B4 | WO 93/09135 | 05/13/93 | WIPO | English |
| /MA/ | B5 | WO 93/14777 | 08/05/93 | WIPO | English |
| /MA/ | B6 | WO 93/16710 | 09/02/93 | WIPO | English |
| /MA/ | B7 | WO 95/26958 | 10/12/95 | WIPO | English |

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

| Exam. Init. | Ref. Des. | Citation |
|-------------|-----------|---|
| /MA/ | C1 | Coffin, "Chapter 51: Retroviridae and Their Replication," In: <i>Virology</i> , (Fields <i>et al.</i> , eds.), Raven Press, New York, 1437-1500, 1990. |
| /MA/ | C2 | Cui <i>et al.</i> , "Apoptosis in bone marrow cells of mice with different p53 genotypes after gamma-rays irradiation in vitro," <i>J. Environ. Pathol. Toxicol. Oncol.</i> , 14:159-163, 1995. |
| /MA/ | C3 | Devine and Chaput, "Chapter 20: Low-Level Effects," In: <i>Military Radiobiology</i> , (Conklin and Walker, eds.), Academic Press, Inc., Orlando, FL, 380-392, 1987. |

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EXAMINER: /Maury Audet/

DATE CONSIDERED: 04/26/2010

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /MA/

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| Exam. Init. | Ref. Des. | Citation |
|-------------|-----------|---|
| /MA/ | C4 | Di Leonardo <i>et al.</i> , "DNA damage triggers a prolonged p53- dependent G1 arrest and long-term induction of Cip1 in normal human fibroblasts," <i>Genes Dev.</i> , 8:2540-2552, 1994. |
| | C5 | Dolle <i>et al.</i> , "First examples of peptidomimetic inhibitors of interleukin-1 beta converting enzyme," <i>J. Med. Chem.</i> , 39:2438-2440, 1996. |
| | C6 | Down <i>et al.</i> , "Variations in Radiation Sensitivity and Repair Among Different Hematopoietic Stem Cell Subsets Following Fractionated Irradiation," <i>Blood</i> , 86:122-127, 1995. |
| | C7 | Earnshaw <i>et al.</i> , "Mammalian caspases: structure, activation, substrates, and functions during apoptosis," <i>Annu. Rev. Biochem.</i> , 68:383-424, 1999. |
| | C8 | Estrov <i>et al.</i> , "Effect of Interleukin-1beta Converting Enzyme Inhibitor on Acute Myelogenous Leukemia Progenitor Proliferation," <i>Blood</i> , 86:4594-4602, 1995. |
| | C9 | Flotte and Carter, "Adeno-associated virus vectors for gene therapy," <i>Gene Ther.</i> , 2(6):357-62 1995. |
| | C10 | Ghosh and Bachhawat, "Chapter 4: Targeting of Liposomes to Hepatocytes," In: <i>Liver diseases, targeted diagnosis and therapy using specific receptors and ligands</i> , (Wu and Wu, eds.), Marcel Dekker, New York, 87-104, 1991. |
| | C11 | Giambarresi and Jacobs, "Chapter 14: Radioprotectants," In: <i>Military Radiobiology</i> , (Conklin and Walker, eds.), Academic Press, Inc., Orlando, FL, 265-301, 1987. |
| | C12 | Gorczyca <i>et al.</i> , "Detection of DNA strand breaks in individual apoptotic cells by the in situ terminal deoxynucleotidyl transferase and nick translation assays," <i>Cancer Res.</i> , 53 (8):1945-1951, 1993. |
| | C13 | Graham and Van Der Eb, "A New Technique for the Assay of Infectivity of Human Adenovirus 5 DNA," <i>Virology</i> , 52:456-467, 1973. |
| | C14 | Granier and Gambini, In: <i>Applied radiobiology and radiation protection</i> , Ellis Horwood, New York, 1990. |
| | C15 | Harms-Rigdahl <i>et al.</i> , "Radiation induced apoptosis," <i>Mutat. Res.</i> , 366:171-179, 1996. |
| ↓ | C16 | Hasper <i>et al.</i> , "A new four-color flow cytometric assay to detect apoptosis in lymphocyte subsets of cultured peripheral blood cells," <i>Cytometry</i> , 40:167-171, 2000. |
| /MA/ | C17 | Hay <i>et al.</i> , "Replication of adenovirus mini-chromosomes," <i>J. Mol. Biol.</i> , 175:493-510, 1984. |

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|-------------|-----------|---|
| /MA/ | C18 | Hearing and Shenk, "Functional analysis of the nucleotide sequence surrounding the cap site for adenovirus type 5 region E1A messenger RNAs," <i>J. Mol Biol.</i> 167:809-822, 1983. |
| | C19 | Hearing <i>et al.</i> , "Identification of a repeated sequence element required for efficient encapsidation of the adenovirus type 5 chromosome," <i>J. Virol.</i> , 61:2555-2558, 1987. |
| | C20 | Hirabayashi <i>et al.</i> , "The p53-deficient hemopoietic stem cells: Their resistance to radiation-apoptosis, but lasted transiently," <i>Leukemia</i> , 11(3):489-492, 1997. |
| | C21 | Hoyes <i>et al.</i> , "Effect of bcl-2 deficiency on the radiation response of clonogenic cells in small and large intestine, bone marrow and testis," <i>Int. J. Radiat. Biol.</i> , 76:1435-1442, 2000. |
| | C22 | Jaeschke <i>et al.</i> , "Protection against TNF-induced liver parenchymal cell apoptosis during endotoxemia by a novel caspase inhibitor in mice," <i>Toxicology and Applied Pharmacology</i> , 169:77-83, 2000. |
| | C23 | Klein <i>et al.</i> , "High-velocity microprojectiles for delivering nucleic acids into living cells," <i>Nature</i> , 327:70-73, 1987. |
| | C24 | Levrero <i>et al.</i> , "Defective and nondefective adenovirus vectors for expressing foreign genes in vitro and in vivo," <i>Gene</i> , 101:195-202, 1991. |
| | C25 | Los <i>et al.</i> , "Activation and caspase-mediated inhibition of PARP: a molecular switch between fibroblast necrosis and apoptosis in death receptor signaling," <i>Mol. Biol. Cell</i> , 13:978-988, 2002. |
| | C26 | Mann <i>et al.</i> , "Construction of a retrovirus packaging mutant and its use to produce helper-free defective retrovirus," <i>Cell</i> , 33:153-159, 1983. |
| | C27 | Mauch <i>et al.</i> , "Hematopoietic stem cell compartment: acute and late effects of radiation therapy and chemotherapy," <i>Int. J. Radiat. Oncol. Biol. Phys.</i> , 31:1319-1339, 1995. |
| | C28 | Nagafuji <i>et al.</i> , "Fas antigen (CD95) and hematopoietic progenitor cells," <i>Leuk. Lymphoma</i> , 24:43-56, 1996. |
| | C29 | Naito <i>et al.</i> , "Phosphatidylserine Externalization Is a Downstream Event of Interleukin-1 beta-Converting Enzyme Family Protease Activation During Apoptosis," <i>Blood</i> , 89:2060-2066, 1997. |
| /MA/ | C30 | Neta and Okunieff, "Cytokine-Induced Radiation Protection and Sensitization," <i>Semin. Radiat. Oncol.</i> , 6:306-320, 1996. |

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|-------------|-----------|--|
| /MA/ | C31 | Nicolas and Rubenstein, "Chapter 25: Retroviral Vectors," In: <i>Vectors: A survey of molecular cloning vectors and their uses</i> , (Rodriguez and Denhardt, eds.), Stoneham: Butterworth, 493-513, 1988. |
| | C32 | Nicolau <i>et al.</i> , "Liposomes as carriers for in vivo gene transfer and expression," <i>Methods Enzymol.</i> , 149:157-176, 1987. |
| | C33 | Norbury and Hickson, "Cellular responses to DNA damage," <i>Annu. Rev. Pharmacol. Toxicol.</i> , 41:367-401, 2001. |
| | C34 | Okada <i>et al.</i> , "In Vivo and In Vitro Stem Cell Function of c-kit- and Sca-1-Positive Murine Hematopoietic Cells," <i>Blood</i> , 80:3044-3050, 1992. |
| | C35 | Paskind <i>et al.</i> , "Dependence of Moloney Murine Leukemia Virus Production on Cell Growth," <i>Virology</i> , 67:242-248, 1975. |
| | C36 | PCT International Search Report, dated August 24, 2004. |
| | C37 | Perkins <i>et al.</i> , "The lpr gene is associated with resistance to engraftment by lymphoid but not erythroid stem cells from normal mice," <i>J. Immunol.</i> , 138:466-469, 1987. |
| | C38 | Ploemacher <i>et al.</i> , "Murine haemopoietic stem cells with long-term engraftment and marrow repopulating ability are more resistant to gamma-radiation than are spleen colony forming cells," <i>Int. J. Radiat. Oncol. Biol. Phys.</i> , 61:489-499, 1992. |
| | C39 | Poggi <i>et al.</i> , "Sensitizers and protectors of radiation and chemotherapy," <i>Curr. Probl. Cancer</i> , 25:334-411, 2001. |
| | C40 | Pruschy <i>et al.</i> , "Key targets for the execution of radiation-induced tumor cell apoptosis: the role of p53 and caspases," <i>Int. J. Radiat. Oncol. Biol. Phys.</i> , 49:561-567, 2001. |
| | C41 | Randall and Weissman, "Phenotypic and Functional Changes Induced at the Clonal Level in Hematopoietic Stem Cells After 5-Fluorouracil Treatment," <i>Blood</i> , 89:3596-3606, 1997. |
| ↓ | C42 | Renan, "Cancer genes: current status, future prospects, and applications in radiotherapy/oncology," <i>Radiother. Oncol.</i> , 19:197-218, 1990. |
| /MA/ | C43 | Ridgeway, "Chapter 24: Mammalian Expression Vectors," In: <i>Vectors: A survey of molecular cloning vectors and their uses</i> , (Rodriguez and Denhardt, ed.), Stoneham, Butterworth, 467-492, 1988. |

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| /MA/ | C44 | Roux <i>et al.</i> , "A versatile and potentially general approach to the targeting of specific cell types by retroviruses: application to the infection of human cells by means of major histocompatibility complex class I and class II antigens by mouse ecotropic murine leukemia virus-derived viruses," <i>Proc. Natl. Acad. Sci. USA</i> , 86:9079-9083, 1989. |
| | C45 | Sane and Bertrand, "Caspase inhibition in camptothecin-treated U-937 cells is coupled with a shift from apoptosis to transient G1 arrest followed by necrotic cell death," <i>Cancer Res.</i> , 59:3565-3569, 1999. |
| | C46 | Seidita <i>et al.</i> , "Differential gene expression in p53-mediated G(1) arrest of human fibroblasts after gamma-irradiation or N-phosphoacetyl-L-aspartate treatment," <i>Carcinogenesis</i> , 21:2203-2210, 2000. |
| | C47 | Shen and White, "p53-dependent apoptosis pathways," <i>Adv. Cancer Res.</i> , 82:55-84, 2001. |
| | C48 | Susin <i>et al.</i> , "Mitochondrial release of caspase-2 and -9 during the apoptotic process," <i>J. Exp. Med.</i> , 189:381-394, 1999. |
| | C49 | Tibbetts, "Viral DNA sequences from incomplete particles of human adenovirus type 7," <i>Cell</i> , 12:243-249, 1977. |
| | C50 | Weiss and Landauer, "Radioprotection by antioxidants," <i>Ann. NY Acad. Sci.</i> , 899:44-60, 2000. |
| | C51 | White <i>et al.</i> , "Lentivirus vectors using human and simian immunodeficiency virus elements," <i>J. Virol.</i> , 73(4):2832-2840, 1999. |
| | C52 | Wong <i>et al.</i> , "Appearance of beta-lactamase activity in animal cells upon liposome-mediated gene transfer," <i>Gene</i> , 10:87-94, 1980. |
| /MA/ | C53 | Zucali, "Mechanisms of protection of hematopoietic stem cells from irradiation," <i>Leuk. Lymphoma</i> , 13:27-32, 1994. |

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